

Memorandum

Date : February 14,
2000~~February 10, 2000~~
Telephone: (916) 653-1614

To : Robert A. Laurie, Commissioner and Presiding Member File: Feb 10, Filings.Doc

From : California Energy Commission - Richard K. Buell
1516 Ninth Street Siting Project Manager
Sacramento, CA 95814-5512

Subject : **STAFF TESTIMONY FOR FEBRUARY 18, 2000 HEARINGS ON THE HIGH DESERT
POWER PROJECT (97-AFC-1)**

Please find attached staff's testimonies in response to the High Desert AFC Committee's February 1, 2000 order. If you have any questions or comments, please call me at (916) 653-1614, or email at rbuell@energy.state.ca.us.

Attachments

RKB:rkb

cc: High Desert Power Project POS List

FINAL STAFF TESTIMONY ON HIGH DESERT

Testimony of Richard K. Buell

INTRODUCTION

In its February 1, 2000 order, the High Desert AFC Committee's stated it would reopened the record to receive evidence on:

- Air Quality – the sufficiency of Emission Reduction Credits obtained by the Applicant;
- Biological Resources – the correct monetary amounts for the mitigation specified in Condition of Certification BIO-7;
- Dry Cooling – supplemental economic information;
- Site Control – evidence of legal entitlement to use proposed site, including any potential growth inducing impacts associated with the entitlement period; and
- Water Agreement – provision of final aquifer storage and recovery agreement, including consistency of terms with proposed "Soil & Water" Conditions of Certification. Applicant and Staff shall also address any potential growth inducing impacts associated with the term of the water agreement, and shall also respond to the specific changes to the proposed Conditions suggested by Mr. Ledford.

Finally, the order stated that the applicant and Staff shall, and other parties may, address concerns raised by the City of Barstow and other commentors on the Presiding Member's Proposed Decision."

This testimony provides staff's findings regarding these points (staff proposed revised BIO-7 condition of certification is contained in separate testimony filed by Marc Sazaki).

AIR QUALITY

On January 14, 2000, the High Desert Power Project, LLC (the applicant), filed the "Applicant[s] Motion to Reopen Proceedings for Limited Purpose". This filing contained copies of option agreements the applicant has entered into to obtain emission offset credits (ERCs) for the proposed project. Those option agreements are complete, except for the Crown, Cork and Seal agreement, which appeared to have lapsed. On January 26, 2000, the applicant filed a letter dated December 20, 1999, and signed by representatives of Crown, Cork and Seal and the applicant, extending the option agreement. Although the option agreements have certain potentially sensitive information excised, staff does not believe this information is necessary to establish that the applicant has obtained ERCs. With receipt of the above information, staff believes that the applicant has demonstrated that it has obtained sufficient ERCs to offset the proposed project. Staff further notes that on December 22, 1999, the Mojave Desert Air Quality Management District sent a letter to the Energy Commission staff stating "[t]hese actions ... secure sufficient

ERCs to completely offset the HDPP, as required by the Final Determination of Compliance dated June 29, 1999.”

DRY COOLING

On January 14, 2000, the applicant provided supplemental testimony of Andy Welch, which addresses the subject of dry cooling. Staff has reviewed this testimony and does not believe it sufficient to conclude that dry cooling is economically infeasible at the High Desert Power Project (HDPP) site.¹ Staff agrees that the project, as mitigated pursuant to staff’s Revised Soil & Water Conditions of Certification attached to this testimony, will not result in any significant environmental impacts. Staff also agrees that the ambient conditions (temperature) at the HDPP site are potentially more severe (i.e., have a more significant impact on efficiency) than those at other sites where applicants have proposed dry cooling. However, staff notes that the most severe temperatures will coincide with peak demand for electricity, and consequently, peak prices for electricity. Although dry cooling would make the HDPP less economic, staff does not believe the applicant has demonstrated that the project will not be economically competitive.

As California has moved to a competitive electricity market, some electricity producers have chosen dry cooling for a variety of reasons; the cost of water, estimated long term availability of cooling water, and water quality impacts to name a few. Staff has conducted its water resources analysis of this project, and other projects, to determine whether the use of fresh inland waters would result in any significant environmental impacts. Barring identification of significant environmental impacts, staff has concluded that the decision of which cooling technology to use should be determined by the project developers. Staff acknowledges that future availability of water in California for power plant cooling is highly uncertain. However, staff believes it important to note that the risk in this case is borne by the applicant.

SITE CONTROL

On January 14, 2000, the applicant provided supplemental testimony of Andy Welch, which addresses the subject of site control. Staff has reviewed the information and believes the documents provided establish the applicant’s control of the site.

AQUIFER STORAGE AND RECOVERY AGREEMENT

On January 14, 2000, the applicant provided supplemental testimony of Andy Welch, which addresses the “Aquifer Storage and Recovery Agreement for the High Desert Power Project” (the Agreement). The Agreement is attached to the

¹ Staff testimony, presented at the October 1999 Hearings, found that dry cooling was technically feasible, but did not reach a conclusion on the economic feasibility of dry cooling at the HDPP site. If dry cooling were found necessary to mitigate HDPP impacts, additional analysis would be required for staff to reach a conclusion on economic feasibility.

applicant's January 14, 2000 filing, and includes staff's January 4, 2000 Revised Soil & Water Resources conditions of certification. Based on Mr. Gary A. Ledford's comments on the Presiding Member's Proposed Decision (PMPD) and motion opposing the applicant's motion to reopen the record, staff has identified several additional concerns about the terms of the Agreement, clarity of staff's conditions of certification, and potential growth inducing impacts resulting from implementation of the Agreement. These are discussed below.

TERM OF THE AGREEMENT

The term of the agreement is 80 years (section 27.1 of the Agreement). Staff's assessment of ground water impacts was based on 30 years, which was the expected project life identified in the AFC. Staff also notes that if no additional storage is provided, other than that required in the conditions of certification, it is possible that the ground water bank will be depleted at 30 years. Consequently, staff believes that the applicant should be required to update the ground water study and possibly provide additional banking, if the applicant intends to operate beyond 30 years. Staff has proposed a new condition of certification to address this point (see revised Soil & Water condition 6.d. below).

GROWTH INDUCING IMPACTS

Staff agrees with Mr. Ledford that certain aspects of the Agreement could create growth inducing impacts. Staff notes that all of the project's water related facilities are oversized. The Agreement (section 15) allows for VVWD's use of HDPP facilities. VVWD's use of HDPP facilities are potentially growth inducing since this would provide an increased water supply for VVWD, thereby removing an obstacle to growth. Table 1 describes various scenarios staff considered in reaching this conclusion. The magnitude of the growth inducing impacts has not been estimated by staff. However, the most significant effect is created by VVWD's use of the HDPP water treatment facilities, since this provides VVWD access to State Water Project (SWP) water, which is currently not available to VVWD. Increased water supply for VVWD potentially leads to new residential, commercial, agriculture or industrial development in the Victor Valley area. This new growth potentially results in increased air emissions, wastewater and waste production, impacts on ground water (see Table 1), traffic, and impacts on community services. The environmental consequences of these impacts have not been addressed in the HDPP proceeding. Staff has not had the time necessary to provide estimates of the magnitude of these impacts in this testimony, given the fact that this issue arose after the conclusion of the October 1999 hearings.

At this time, staff believes there are two ways that these potential growth inducing impacts could be addressed in the HDPP proceedings: 1) the schedule for the project could once again be extended to provide time the parties to present a detailed analysis of growth inducing impacts; or 2) staff can propose measures which would limit the potential for growth inducing impacts to occur. To expedite this process, staff has included in this testimony proposed measures to limit the potential for growth inducing impacts. These three measures and one to address the point raised by Mr. Ledford about the term of the agreement are identified on Table 1 and discussed below:

TABLE 1 IMPACTS NOT YET EVALUATED

Action Leading To Impact	Impacts To Ground Water	Growth Inducing	Probability Of Occurring	Possible Mitigation
HDPP continues operation beyond 30 years.	Impact uncertain, since staff analysis only examined 30-year life of project. Solution is to add condition to require the ground water study be updated, if the owner wishes to extend project life.	None.	Speculative.	Add new condition to revisit water study after thirty years. (Soil&Water 6.d.)
VVWD uses HDPP wells to supply domestic needs during 30 years of project life.	No impact because Soil & Water Conditions 5 and 17 would require production from HDPP wells to be offset by reductions from wells closer to Mojave River.	VVWD use of HDPP wells could lead to lower water rates, which could encourage increased water demand. However, increased demand could only be met from wells farther away than the HDPP wells, which could tend to raise rates. It is unclear whether these pricing impacts would be offsetting.	There is a low probability of growth inducing impacts occurring since the economic benefit is uncertain and likely small.	Soil & Water Resources conditions address these impacts. (Soil&Water 5 and 17)
VVWD uses HDPP wells to supply domestic needs after 30 years of project life	Impact to ground water is uncertain, since it is unclear what steps will have been taken to address the overdraft or mitigate impacts. Presumably, VVWD's use of HDPP wells would be governed by the Adjudication or any subsequent agreement or requirements to mitigate ground water impacts.	Speculative, since it is not clear what economic or environmental conditions will exist in 30-years.	High probability of occurring.	Add new condition requiring future operation of the water facilities to be addressed in the closure plan for the project (Soil&Water Verification to condition 6).
VVWD uses HDPP wells to supply domestic needs after project premature closure in 1 to 30 years.	Impacts to ground water are possible, since there is no reasonable expectation that the ground water overdraft problem will be solved.	Potentially growth inducing because VVWD will have additional wells to supply growth in the area.	Significant probability of the project failing due to unavailability of SWP water. However, if SWP water is unavailable because it is being used to mitigate overdraft problem, there is a lower probability of water impacts. If SWP water is not available, probability of growth inducing impacts is lower since water rates in area could rise.	Add new conditions requiring the project owner to maintain ownership of water facilities, and requiring future operation of the wells to be addressed in the closure plan for the project. (Soil&Water Verification to condition 6 and condition 7).
VVWD uses HDPP water treatment facility to treat SWP water for domestic use.	No impacts to ground water, unless VVWD's use of SWP water displaces water need for ground water recharge.	Potentially growth inducing because VVWD will have additional water supplies.	High probability of occurring.	Add new condition requiring the project owner to maintain ownership of water facilities and limiting VVWD's use of water treatment facilities to emergency conditions. (Soil&Water 17 4)).

1. Add new condition to revisit water study after thirty years. (Soil&Water 6.d)
By requiring the ground water study to be reevaluated in thirty years, should the owner wish to continue operation, the amount of ground water in the bank would be assessed and any measures needed to mitigate impacts on ground water due to further operation could be identified.
2. Add new condition requiring the applicant to maintain ownership of water facilities. (Soil&Water7)
The Energy Commission as lead agency must review construction and operational impacts of all aspects of the proposal. Our analysis to date has not evaluated the use of the project's water facilities by others, which could have growth inducing impacts. The Energy Commission cannot allow the use of these facilities by others, until such an analysis is conducted.
3. Add new condition requiring future operation of the water facilities to be addressed in the closure plan for the project. (Verification to Soil&Water 6)
By requiring the operation of the water facilities to be addressed in the closure plan for the project, the Energy Commission will be able to assess any potential environmental impacts resulting from future operation of the wells.
4. Add new condition limiting VVWD's use of water treatment facilities to emergency conditions. (Soil&Water 17 4))
By limiting VVWD's use of the water treatment facilities to emergency conditions, VVWD's water supply will not increase, and thus, an environmental impact will not result from allowing VVWD access to a new supply of water.

These measures are incorporated in the Revised Conditions of Certification below. If these conditions are not acceptable to the applicant or VVWD, either of these parties could conduct a detailed assessment of the growth inducing potential of VVWD's use of HDPP facilities.

CLARIFICATION OF SOIL & WATER RESOURCES CONDITIONS OF CERTIFICATION

At the hearing on the PMPD, Mr. Ledford raised a number of issues regarding the clarity of staff's proposed conditions of certification. Staff's revised conditions of certification provide clarification based on Mr. Ledford's comments. Conditions that have substantial changes from those presented in the PMPD or are additions are shown underlined.

RESPONSE TO CITY OF BARSTOW COMMENTS

On January 14, 2000, the City of Barstow (the City) filed comments on the PMPD on four points. On February 7, 2000, the City file a letter with the applicant indicating that Mr. Buck Johns had allayed their concerns. The City identified that the location of Pearblossom Highway was incorrectly shown on page 14. Staff recommends that the revised PMPD correct this error.

The City raised concerns regarding whether the City would be "penalized" by the purchase of interpollutant/interbasin emission reduction credits. The City correctly

notes that the PMPD states that “[p]roject NOx and VOC emissions could, however, contribute to O3 violation in areas downwind, such as Barstow.” Staff believes this is an accurate statement. However, staff believes that the proposed interpollutant/interbasin emission reductions in combination with implementation of the Mojave Desert Air Quality Management District’s attainment plan will ensure than no significant impacts occur downwind in Barstow.

The City raised concerns regarding the annual water use of the project and regarding the project’s potential impacts to the ground water overdraft problem. The proposed project will bank 13,000 acre-feet of water to supply water during a hypothetical three year drought. The maximum annual consumption of the project is 4,000 acre-feet per year.

The City’s last comment relates to the cost effectiveness of dry cooling. This issue is discussed above.

REVISED CONDITIONS OF CERTIFICATION

SOIL&WATER-1 The only water used for project operation (except for domestic purposes) shall be State Water Project (SWP) water obtained by the project owner consistent with the provisions of the Mojave Water Agency’s (MWA) Ordinance 9.

- a. Whenever SWP water is available to be purchased from MWA, the project owner shall use direct delivery of such water for project operation.
- b. Whenever water is not available to be purchased from the MWA, the project owner may use SWP water banked in the seven HDPP wells identified in Figure Number 1 of the Addendum Number 1 to the “Evaluation of Alternative Water Supplies for the High Desert Power Project” (Bookman-Edmonston 1998) as long as the amount of water used does not exceed the amount of water determined to be available to the project pursuant to **SOIL&WATER-5**.
- c. If there is no water available to be purchased from the MWA and there is no banked water available to the project , as determined pursuant to **SOIL&WATER-5**, no groundwater can be pumped, and the project can not operate. At the project owner’s discretion, dry cooling may be used instead, if an amendment to the Commission’s decision allowing dry cooling is approved.

Verification: See verification for conditions 2, 3 and 6.

SOIL&WATER-2 The project owner shall provide a copy of the storage agreement between the Mojave Basin Area Watermaster (Mojave Water Agency) and VVWD prior to the initiation of any groundwater banking, and on an annual basis thereafter.

Verification: The project owner shall submit to the CEC CPM a copy of the application for a storage agreement with the Mojave Basin Area Watermaster at the time the application is filed. The project owner shall submit to the CEC CPM a

copy of the approved storage agreement from the Mojave Basin Area Watermaster within fifteen (15) days of receipt of the agreement.

SOIL&WATER-3 The project owner shall provide a copy of a "Will Serve Letter" from VVWD to the CEC CPM prior to the start of commercial operation.

Verification: The project owner shall provide a copy of a "Will Serve Letter" from VVWD to the CEC CPM within thirty (30) days of its receipt by the project owner.

SOIL&WATER-4 Injection Schedule:

- a. The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the commercial operation. During this period, the project owner may pump banked groundwater that is available to the project as determined by
SOIL&WATER-5.
- b. By the end of the fifth year of commercial operation, the amount of water injected minus the amount of banked groundwater used for project operation shall meet or exceed thirteen thousand (13,000) acre-feet.
- c. After the fifth year of commercial operation and until three (3) years prior to project closure, the project owner shall replace banked groundwater used for project operation as soon as SWP water is available for sale by MWA. The project owner may choose to delay replacement of a limited quantity of banked groundwater used for project operations during aqueduct outages until the cumulative amount of groundwater withdrawn from the bank reaches one thousand (1,000) acre-feet. Once the limit of one thousand (1,000) acre-feet has been reached, the project owner shall replace banked groundwater used for project operation during aqueduct outages as soon as SWP water is available for sale by MWA.

Verification: See the verification to condition 5.

SOIL&WATER-5 Calculation of Balance:

- a. The amount of banked groundwater available to the project shall be calculated by the CEC staff using the HDPP model, FEMFLOW3D. The amount of banked groundwater available shall be updated on a calendar basis by the CEC staff, taking into account the amount of groundwater pumped by the project during the preceding year and the amount of water banked by the project during the preceding year.
- b. When calculating the amount of banked groundwater available to the project, CEC staff shall subtract any amount of water that is produced by Victor Vally Water District (VVWD) from the project wells for purposes other than use by the project that exceeds the baseline, as defined in
Soil&Water-17(1).
- c. Each annual model run shall simulate the actual sequence of historic pumping and injection since the injection program began. From the model runs, the CEC Staff shall determine the amount of groundwater

available for each new calendar year. If the amount of banked groundwater available to the project is less than one (1) year's supply plus 1,000 acre-feet, the CEC Staff shall determine the amount of groundwater available to the project on a quarterly basis.

Verification: During the period beginning eighteen (18) months after the start of rough grading and ending the end of the first month after one full year (12 months) of commercial operation, the project owner shall provide a monthly report to the CEC CPM and to the CDFG on the progress of construction of the project wells, and shall identify the amount of SWP water injected and the amount of groundwater pumped during the previous month.

After the end of the first month after one full year (12 months) of commercial operation, the project owner shall submit to the CEC CPM and to the CDFG in writing, on a quarterly basis, a monthly accounting of all groundwater pumped and all SWP water treated and injected for the preceding quarter. Within thirty (30) days of receipt of the approved annual storage agreement, pursuant to **SOIL&WATER-2**, the project owner shall submit to the CEC CPM and to the CDFG an annual written estimate of the anticipated amount of SWP water that will be banked and the anticipated amount of groundwater that will be pumped in the coming year. If the amount of banked groundwater available to the project is less than one (1) year's supply plus one thousand (1,000) acre-feet, quarterly estimates of anticipated injection and withdrawal will be required;

CEC Staff shall use this information in the HDPP model to evaluate the amount of banked groundwater available and to calculate the approximate rate of decay. CEC Staff shall notify the project owner within thirty (30) days of the amount of banked groundwater available to be pumped in the new calendar year or in the next quarter, if applicable.

SOIL&WATER-6 Banked Water Available for Project Use:

- a. The amount of banked groundwater available to the project during the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the High Desert Power Project (project) wells, minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater.
- b. The amount of banked groundwater available to the project after the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the project wells, [minus the amount of groundwater pumped by the project owner](#), minus the amount of dissipated groundwater, minus one thousand (1,000) acre feet.
- c. During the three (3) years prior to project closure, the project owner may withdraw the balance of banked groundwater determined to be available to the project, except for one thousand (1,000) acre-feet, pursuant to **SOIL&WATER-5**. The project owner is not required to replace this final withdrawal of groundwater. However, during the three years prior to project closure, at no time may the balance of banked groundwater

decline below one thousand (1,000) acre-feet. Furthermore, there must be a remaining balance of one thousand (1,000) acre-feet banked in the groundwater system at closure, as determined to be available to the project pursuant to **SOIL&WATER-5**.

- d. The project shall not operate for longer than 30 years unless the Commission has approved an amendment to its license that specifically evaluates the water resources impacts of continued operation and imposes any mitigation necessary to ameliorate any identified impacts.
- e. No water is available for project use if the requirements of **SOIL&WATER-4** are not met by the project owner.

Verification: The project owner shall use the same verification as for **SOIL&WATER-5**; however, in addition, any facility closure plan submitted during that last three years of commercial operation shall address the disposition of any remaining water available to the project, as well as the disposition of the pipeline, wells, and water treatment facility.

SOIL&WATER-7 The project owner shall retain ownership of all project facilities, including the water pipeline, the project wells, and the water treatment facility. The project owner may enter into a contract allowing operational control by the Victor Valley Water District, providing that the contract contains the provisions identified in SOIL&WATER 18.

Verification: Should the project owner choose to sell facilities, it must apply for an amendment to the Energy Commission Decision, and include an evaluation of any environmental effects associated with the transfer of ownership to another entity.

SOIL&WATER-8 The project owner shall conduct pumping tests in all project wells to establish *in situ* hydraulic parameters including transmissivity and storativity in the Regional Aquifer. From these parameters and the project well-log data, the project owner shall calculate the following site-specific values:

- effective horizontal hydraulic conductivity
- effective vertical hydraulic conductivity
- specific yield, if pumping tests indicate the aquifer is unconfined, or
- specific storage, if aquifer is confined.

Prior to conducting the pumping test, the project owner shall submit a work plan detailing the methodology to be used to conduct the proposed pumping tests and to calculate the specified parameters and values to the CEC CPM and to the CDFG for review and approval.

Based upon the information generated by the pumping tests, CEC Staff shall revise the HDPP model to reflect the results of the pumping tests. All modeling runs referred to in **SOIL&WATER-5** shall incorporate the results of

these pumping tests, following approval by the CEC CPM determined pursuant to this condition.

Protocol: The pumping tests shall provide data to calculate the *in situ* hydraulic parameters of the Regional Aquifer.

- At a minimum the pumping tests for all HDPP wells shall include the measurement of drawdown in at least one (1) non-pumping (observation) well that is screened at the same depth as the pumping well.
- Observation well(s) for each pumping test must be sufficiently close to the pumping well that pumping produces measurable drawdown of sufficient duration in the observation well(s) to analyze the site-specific hydraulic parameters including transmissivity and storativity in the Regional Aquifer.
- In addition, if the observation well data indicates a slow release of groundwater from storage, the pumping test shall be extended until the release from storage can be observed to stabilize in a plot of the data from the observation well(s). (For a description of the evaluation of storativity under slow release conditions, see Driscoll, F.G., 1986, Groundwater and Wells, H.M. Smyth, Inc., p. 229-230).
- Single well pumping tests and pumping tests that do not produce enough measurable drawdown in observation wells to conclusively calculate hydraulic parameters will not meet the Conditions of Certification.

Verification: The project owner shall submit to the CEC CPM and to the CDFG, six (6) months prior to the start of pumping tests, the work plan that details the methodology for conducting the proposed pumping tests on the seven (7) HDPP wells and for calculating the specified parameters and values. With the approval of the work plan by the CEC CPM, in consultation with the CDFG, the project owner shall perform the pumping tests following the CEC protocol.

Within two (2) months after the completion of pumping tests, the project owner shall submit to the CEC CPM and to the CDFG a report detailing how the pumping tests were conducted and the results of the tests, including the calculation of: (1) the *in situ* hydraulic parameters of transmissivity and storativity for the Regional Aquifer; and (2) the site-specific values of effective horizontal hydraulic conductivity, effective vertical hydraulic conductivity, and specific yield and/or specific storage.

SOIL&WATER-9 The project owner shall modify the HDPP model grid to accommodate the representation of gradational changes in the hydraulic conductivity of the Regional Aquifer, in conformance with the USGS Mojave River Groundwater Basin model.

The CEC Staff shall revise the HDPP model, using the modified grid, to incorporate the gradational changes in the hydraulic conductivity of the Regional Aquifer represented in the USGS Mojave River Groundwater Basin model.

All modeling runs referred to in **SOIL&WATER-5** shall incorporate the modifications of the model along with the model information obtained from the USGS following approval by the CEC CPM determined pursuant to this condition.

Verification: The project owner shall submit the modified model grid input files (including updated versions of any other input files that are effected by the modification of the grid) within two (2) months after the construction of the HDPP wells to the CEC Staff for review and approval, in consultation with the CDFG.

SOIL&WATER-10 The project owner shall prepare an annual report of describing groundwater level monitoring performed as follows. The project owner shall monitor groundwater levels in all project wells, in VVWD wells 21, 27, 32, and 37, in Adelanto wells 4 and 8a, and in all other wells within a one (1) mile radius of the project wells. Groundwater monitoring shall also be conducted within the Mojave River Aquifer Alluvium. Additional monitoring wells specified by VVWD for the evaluation of well interference within Pressure Zone 2 should also be included. Monitoring shall be performed on a quarterly basis starting within six (6) months after the start of rough grading.

Verification: The project owner shall annually submit a copy of the groundwater level monitoring report to the CEC CPM, the CDFG, the MWA and the VVWD.

SOIL&WATER-11 The project owner shall submit an approved Waste Discharge Requirement prior to the start of any groundwater banking unless the Regional Water Quality Control Board (RWQCB) decides to waive the need to issue a waste discharge requirement or waive the need for the project owner to file a Report of Waste Discharge.

Verification: The project owner shall submit a copy of the approved Waste Discharge Requirement from the Lahontan RWQCB to the CEC CPM within sixty (60) days of the start of rough grading. The project owner shall also submit to the CEC CPM a copy of any additional information requested by the RWQCB as part of their evaluation of the application. If the RWQCB decides to waive the need to file a Report of Waste Discharge or the need for a waste discharge requirement, the project owner shall submit a copy of the letter from the RWQCB to the CEC CPM. If a waste discharge requirement is required by the RWQCB, the project owner shall provide a copy of the approved permit to the CEC CPM.

SOIL&WATER-12 The project owner shall prepare and submit to the CEC CPM and, if applicable, to the Lahontan RWQCB for review and approval, a water treatment and monitoring plan that specifies the type and characteristics of the treatment processes and identify any waste streams and their disposal methods. The plan shall provide water quality values for all constituents monitored under requirements specified under California Code of Regulations, Title 22 Drinking Water Requirements from all production wells within two (2) miles of the injection wellfield for the last five (5) years.

The plan shall also provide SWP water quality sampling results from Rock Springs, Silverwood Lake or other portions of the East Branch of the California Aqueduct in this area for the last five (5) years. Also identified in the plan will be the proposed treatment level for each constituent based upon a statistical analysis of the collected water information. The statistical approach used for water quality analysis shall be approved prior to report submittal by the CEC CPM and, if applicable, the RWQCB. Treatment of SWP water prior to injection shall be to levels approaching background water quality levels of the receiving aquifer or shall meet drinking water standards, whichever is more protective. The plan will also identify contingency measures to be implemented in case of treatment plant upset.

The plan submitted for approval shall include the proposed monitoring and reporting requirements identified in the Report of Waste Discharge (Bookman-Edmonston 1998d) with any modifications required by the RWQCB.

Verification: Ninety (90) days prior to banking of SWP water within the Regional Aquifer, the project owner shall submit to the Lahontan RWQCB and the CEC CPM a proposed statistical approach to analyzing water quality monitoring data and determining water treatment levels. The project owner shall submit the SWP water treatment and monitoring plan to the CEC CPM and, if appropriate, to the Lahontan RWQCB for review and approval. The CEC CPM's review will be conducted in consultation with the MWA, the VVWD, and the City of Victorville. The plan submitted for review and approval shall reflect any requirements imposed by the RWQCB through a Waste Discharge Requirement.

SOIL&WATER-13 The project owner shall implement the approved water treatment and monitoring plan. All banked SWP water shall be treated to meet local groundwater conditions as identified in Condition **SOIL&WATER-2**. Treatment levels may be revised by the CEC and, if applicable, by the RWQCB, based upon changes in local groundwater quality identified in the monitoring program not attributable to the groundwater-banking program. Monitoring results shall be submitted annually to the CEC CPM and, if applicable, to the RWQCB.

Verification: The project owner shall annually submit monitoring results as specified in the approved plan to the CEC CPM. The project owner shall identify any proposed changes to SWP water treatment levels for review and approval by the CEC and, if appropriate, the Lahontan RWQCB. The project owner shall notify the RWQCB, the VVWD and the CEC CPM of the injection of any inadequately treated SWP water into the aquifer due to an upset in the treatment process or for other reasons. Monitoring results shall be submitted to the CEC CPM

SOIL&WATER-14 The project owner shall provide access to the United States Air Force for all efforts to characterize and remediate all soil and groundwater contamination at the power plant site.

Verification: The project owner shall submit in writing a copy within two (2) weeks of receipt of any request from the Air Force for site access to characterize or remediate contaminated soil and/or groundwater to the CEC CPM.

SOIL&WATER-15 Prior to beginning any clearing, grading or excavation activities associated with closure activities, the project owner must submit a notice of intent to the State Water Resources Control Board to indicate that the project will operate under provisions of the General Construction Activity Storm Water Permit. As required by the general permit, the project owner will develop and implement a Storm Water Pollution Prevention Plan.

Verification: Two (2) weeks prior to the start of construction, the project owner will submit to the CEC CPM a copy of the Storm Water Pollution Prevention Plan.

SOIL&WATER-16 Prior to the initiation of any earth moving activities, the project owner shall submit an erosion control and revegetation plan for CEC Staff approval. The final plan shall contain all the elements of the draft plan with changes made to address the final design of the project.

Verification: Thirty (30) days prior to the initiation of any earth moving activities, the final erosion control and revegetation plan shall be submitted to the CPM for approval, in consultation with the CDFG.

Soil & Water 17 The project owner shall enter into an Aquifer Storage and Recovery Agreement with the Victor Valley Water District (VVWD). This agreement shall contain the following conditions:

- 1) It shall prohibit VVWD from producing or allowing others to produce water from project wells, except that VVWD may produce water from project wells: (i) for use by the HDPP project pursuant to Soil & Water 1; and (ii) for purposes other than use by the HDPP project pursuant to Soil & Water 1 provided that such production, in combination with production from the VVWD wells identified in "c" below does not exceed the amount identified as "the baseline", as defined in "a" below.
- a. The contract shall define the baseline as the average aggregated annual production of the wells identified in "c" during the immediately preceding five years. The contract shall state that any water produced by VVWD pursuant to (ii) above shall be included in subsequent calculations of the baseline only if that production does not exceed the baseline for the calendar year in which the production occurs, as required by this condition.
- b. The contract shall require VVWD to establish the first baseline using the five calendar years preceding the operation of the project wells, and shall re-calculate the baseline on a calendar year basis by January 15 of each year.
- c. The contract shall state that "wells identified in "c" means VVWD wells that are located in a corridor two to two and one half miles wide adjacent

to and west of the river's western bank including all wells within the following land sections:

- Within Township 6 North, Range 4 West, sections 31, 32, 33, and 34.
- Within Township 5 North, Range 4 West, sections 4, 5, the east ½ of 8, 9, 10, 15, 16, the east ½ of 21, 22, 23, 25, 26, 27, the east ½ of 28, the east ½ of 33, 34, 35, and 36.

2) It shall state that the project owner shall provide to the CEC CPM and CDFG on a quarterly basis a monthly accounting of 1) all water pumped from project wells that is supplied to the project owner, and 2) water pumped from project wells that is supplied to VVWD

3) It shall state that VVWD shall provide to the CEC CPM and CDFG a baseline calculation no later than January 15 of each year.

4) The contract shall prohibit VVWD from using the water treatment facility except in emergency circumstances. In no event, shall VVWD use of the treatment facility exceed fourteen days in any calendar year, unless the Energy Commission has approved an amendment to the project decision allowing such use.

5) The contract may include terms that require VVWD to compensate HDPP for any costs associated with subtractions from the amount of banked groundwater available to HDPP under the terms of Soil&Water-5(c).

Verification: The project owner shall provide to the CEC CPM and CDFG a copy of a signed Aquifer Storage and Recovery Agreement with the terms described above prior to certification of the project. Any amendments to this agreement shall be approved by the CEC CPM 30 days prior to the effective date of the amendment.

Soil & Water 18 The project owner shall ensure that flow meters are installed on project wells such that the total amount of water injected and produced on a monthly basis can be determined. In addition, the project owner shall ensure that separate flow meters are installed on 1) that portion of the water delivery system that is dedicated to providing water to the project owner; and 2) on that portion of the water delivery system that will be used to provide water to VVWD pursuant to Soil & Water 17 (2).

Verification: The project owner shall provide to the CEC CPM and CDFG on a quarterly basis a monthly accounting of 1) all groundwater injected into project wells; 2) water pumped from project wells that is supplied to the project owner, and 3) water pumped from project wells that is supplied to VVWD.

BIOLOGICAL RESOURCES

Testimony of Marc Sazaki

INTRODUCTION

Prior to and up until the Committee's 10/07/99 hearing, CEC staff worked with representatives from the California Department of Fish and Game (Department), the U.S. Bureau of Land Management (Bureau), the U.S. Fish and Wildlife Service, and the High Desert Power Project to develop adequate mitigation for project related short- and long-term habitat loss affecting the desert tortoise (*Gopherus agassizii*) and the Mohave ground squirrel (*Spermophilis mohavense*). The desert tortoise is state and federally listed as a "threatened species. The Mohave ground squirrel is state listed as a "threatened species", but is not federally listed.

All parties agreed that the loss of desert tortoise habitat should be compensated by acquiring 1,242.8 acres of suitable habitat off site. Similarly, suitable habitat should be acquired and protected for Mohave ground squirrel. Through a Memorandum of Understanding between the Department and the Bureau, projects resulting in desert tortoise habitat loss would be compensated by acquiring replacement habitat and transferring it in fee title to either the state or federal government. If most of the impact occurs on state land, the state would be entitled to all the compensation lands. On the other hand, if most of the impact occurs on federal land, the federal government would be entitled to all the compensation lands.

Shortly before the aforementioned hearing, the Bureau informed CEC staff and the Department that compensation for desert tortoise habitat loss associated with High Desert Power Project actions on federal land would have to go to the federal government. Therefore, of the 1,242.8 acres of habitat compensation, the Bureau would require, as part of the right-of-way grant for the 32 mile natural gas pipeline that goes from the project to Kramer Junction, that 318.1 acres be provided to the Bureau (BLM 1999). This leaves 924.7 acres of desert tortoise habitat compensation that should go to the state if the project and 32-mile gas pipeline are constructed. If the project is constructed without the 32-mile gas pipeline, only 167.8 acres would go to the state and none to the Bureau.

CEC staff made an effort to adjust the estimated costs of the habitat compensation arising from the Bureau's change in position, but since the hearing, it has become apparent that the outcome was not only unclear, but incorrect because the adjustments made were simply based on a direct ratio between the acreage that would go to the state and the acreage that would go to the Bureau. In addition, for the project with the 32-mile gas pipeline, the wrong amount (\$313,078.00) for initial protection of the land was mistakenly entered for that cost estimate.

For the new habitat compensation allocation between the state and federal government, 924.7 acres and 318.1 acres respectively, CEC staff re-ran the Property Analysis Record program that was originally used before the Bureau changed its position on habitat compensation. The outcomes are presented in Attachment 1 and Attachment 2. Attachment 1 considers the project and the 32-

mile gas pipeline (924.7 acres), while Attachment 2 considers the project without the 32-mile gas pipeline (167.8 acres). The dollar amounts presented are estimates for the purpose of establishing security deposits and endowment costs.

For 924.7 acres, the estimated costs are: \$873,393.73 for acquiring and transferring the habitat , \$52,200.08 for initial protection of the land, and \$482,640.00 to provide an endowment for long-term management. If the 32-mile gas pipeline is not constructed, the estimated costs for 167.8 acres are: \$162,361.87 for acquiring and transferring the habitat , \$36,014.45 for initial protection of the land, and \$353,100.00 to provide an endowment for long-term management.

Based on this analysis, CEC staff recommends the Presiding Member's Proposed Decision incorporate a new **BIO-7** Condition of Certification as specified below.

CONDITIONS OF CERTIFICATION

BIO-7 Prior to the start of rough grading of the project or any related facilities, the project owner shall acquire, protect, and transfer 924.7 acres (167.8 acres if the pipeline to Kramer Junction is not built) of land that the CPM, in consultation with the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS), approves as suitable habitat of the desert tortoise and Mohave ground squirrel. Fee title to the land shall be transferred to CDFG or, with the approval of the CPM and CDFG in consultation with the USFWS, to another public agency or a private non-profit conservation organization. If fee title is not transferred to CDFG, then the project owner shall ensure that a conservation easement approved by CDFG is recorded in favor of CDFG prior to transfer of fee title. Prior to transfer of fee title, the project owner shall provide \$482,640.00 (\$353,100.00 if the pipeline to Kramer Junction is not built) for establishment of a non-wasting endowment for the benefit of the fee title grantee to provide for the long-term management of the habitat lands. The project owner shall obtain approval of the CPM and CDFG of terms governing use and maintenance of the endowment fund.

The project owner may proceed with site disturbance for the project and related facilities prior to completing the requirements in this condition if the project owner establishes a trust account or irrevocable letter of credit approved by the CPM and CDFG, in the amount of \$1,403,234.00 (\$551,476.00 if the pipeline to Kramer Junction is not built). The security shall be provided to CDFG prior to commencement of any site disturbance and shall be maintained until all requirements of this condition are approved by the CPM and CDFG as complete.

Any remaining security after satisfaction of this condition, as determined by the CPM in consultation with CDFG, shall be returned to the provider of the security. The amount of the security is calculated as follows:

1. Estimated cost of acquiring and transferring 924.7 acres of habitat: \$873,393.73 (167.8 acres and \$162,361.87 if the pipeline to Kramer Junction is not built).
2. Estimated cost of initial protection of the land: \$52,200.08 (\$36,014.45 if the pipeline to Kramer Junction is not built).
3. Estimated cost of endowment for long-term management: \$482,640.00 (\$353,100.00 if the pipeline to Kramer Junction is not built).

If security is provided to allow the commencement of site disturbance prior transfer of habitat lands, the project owner must complete the required acquisition, protection, and transfer of land no more than twelve (12) months after the start of site disturbance and the endowment must be established for the benefit of the fee title grantee prior to transfer of the land. CDFG shall be entitled to draw upon the security to carry out requirements not completed by the project or within twelve (12) months from the start of site disturbance.

Verification: At least thirty (30) days prior to the start of surface disturbance on the project site or any related facilities, the project owner shall provide the CPM with a copy of the draft or form of letter of credit established pursuant to this Condition of Certification. The project owner shall provide the CPM and the CDFG a copy of the final letter of credit not fewer than five (5) business days prior to the start of surface disturbance, or at a later mutually agreed upon time. Upon completion of the acquisition and transfer of the habitat lands to the approved recipient(s), the project owner shall provide the CPM with copies of all title transfer records or records verifying other approved transactions.

REFERENCES

BLM (Bureau of Land Management) 1999. Letter from District Manager, BLM California Desert District to Field Office Supervisor, FWS Ventura Field Office, 2493 Portola Road, Suite B, Ventura, CA 93003. Subject: Initiation of Endangered Species Act (ESA) Section 7 Consultation on Southwest Gas Corporation's Proposed Natural Gas Pipeline for Service to the High Desert Power Project in San Bernardino County, California. Dated: December 22, 1999.